

GALEMIN, I.M., kand.tekhn.nauk; LEPIKHIN, L.A., inzh.

Durability of the brickwork in blast furnace stacks of the
Magnitogorsk Metallurgical Combine. Stal' 22 no.3:215-218
M- '62. (MIRA 15:3)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii i
Magnitogorskiy metallurgicheskiy kombinat.
(Magnitogorsk--Blast furnaces--Design and construction)

GALEMIN, I.M.

Design and stability of blast furnace hearths and bottoms.
Metallurg 7 no.6:14-15 Je '62. (MIRA 15;7)
(Blast furnaces--Design and construction)

GALEMIN, I.M.; SAGAYDAK, I.I.; LEPIKHIN, L.A.

Service of grog and high-alumina firebrick in blast furnace
stacks. Ogneupory 27 no.9:403-408 '62. (MIRA 15:8)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii (for
Galemin). 2. Magnitogorskiy metallurgicheskiy kombinat (for
Sagaydak, Lepikhin).

(Firebrick)

GALEMIN, I.M.; IVANTSOV, G.I.

Investigating the cast iron from a combined lining of blast
furnace hearths and hearth bottoms. Izv. vys. ucheb. zav.;
chern. met. 6 no.12:28-34 '63. (MIRA 17:1)

1. Magnitorgorskiy gorno-metallurgicheskiy institut.

GALEMIN, I.M.; SHATILIN, A.L.

- . Drawing pig iron from the hearth before blowing out a blast furnace. Metallurg 8 no.14-6 Ja '63. (MIRA 16:1)
(Blast furnaces—Maintenance and repair)

GALEMIN, I.M.

Stability of carbon linings in blast furnaces. Stal' 23 no.10:
887-888 0 '63. (MIRA 16:11)

GALEMIN, I.M.; GOROKH, A.V.

Mechanism of the disintegration of the carbon lining in blast
furnace hearths and hearth bottoms. Ogneupory 28 no.9:407-412
'63. (MIRA 16:10)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

GALETH, J.M.; GOROV, A.V.

Changes in multiple-grog firebrick during service in a blast furnace
hearth. Ogneupory 29 no.6:258-263 '63. (RUSSIA 1963)

Do. Leningradskiy nauchno-issledovatel'skiy institut metallurgii.

GALEMIN, I.M.; COROKH, A.V.

Effect of zinc on the surface of refractory linings of blast
furnace stacks. Izv. vys. ucheb. zav.; chern. met. 7 no.11:
41-49 '64. (MIRA 17:12)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii,

GALEMIN, I.M.; GOROKH, A.V.

Sinter reduction and slag formation at various levels of a blast furnace. Izv. vys. ucheb. zav.; Chern. met. 7 no.12:24-32 '64
(NIRS 18:1)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

SAGAYDAK, I.I.; GALEMIN, I.M.; SHPARBER, L.Ya.; KARSHIN, V.P.

Durability of air and slag tuyeres. Metallurg 9 no.4:6-8
Ap '64. (MIRA 17:9)

1. Magnitogorskiy metallurgicheskiy kombinat i Chelyabinskiy
nauchno-issledovatel'skiy institut metallurgii.

GALEMIN, I.M.; SAGAYDAK, I.I.; KARSHIN, V.P.; SHPARBER, L.Ya.;
KURUNOV, I.F.; BORTS, Yu.M.

Investigating combustion processes in furnace hearths.

Stal' 23 no. 3:204-207 Mr '64.

(MIRA 17:5)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii
i Magnitogorskiy metallurgicheskiy kombinat.

GALEMIN, I.M., kand.tekhn.nauk

Causes for the wear and disintegration of protective linings on
blast furnace tops. Stal' 23 no. 3:210 Mr '64. (MIRA 17:5)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

GOROKH, A.V.; GALEMIN, I.M.; KOMLEV, G.A.

Behavior of zinc in a blast furnace and its effect on the refractory lining of the stack. Stal' 24 no.7:587-591 JI '64.

(MIRA 18:1)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

GOROKH, A.V.; GALEMIN, I.M.

Sooty carbon in blast furnace refractories. Ogneupory 29 n. 9:394-399
'64. (MIRA 17:10)

1. Chelyabinskiy nauchno-issledovatel'skiy institut metallurgii.

12

THE ROLLING AND CALIBRATION OF RAILWAY RAILS TYPE R-44. M.
Galemin. (Stal, 1938, No. 8-9, pp.42-46). (In Russian). The design of the nine passes used in rolling down the blooms of 200 x 180 mm. in cross-section and 8-10 m. long to the finished rail are described and illustrated by diagrams. Reference is made to repair of the worn steel rolls by surfacing using the welding process.

ASB-54A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND ORDERS										PROCESSES AND PROPERTIES INDEX										1ST AND 2ND ORDERS									
<p>8</p> <p>12</p> <p>Rolling by the Method of Minimum Tolerances. M. Galemin. (Stal, 1939, No. 1, pp. 39-41). (In Russian) As has been pointed out, an appreciable economy in metal can be achieved by rolling sections, &c., on the small side but so that they just come within the minimum (negative) tolerance limits specified. The author mentions briefly some of the factors which have to be considered in rolling by this method and refers by way of examples to the rolling of round bars, angles and rails. A further advantage of this method is the longer life of section rolls. The reduction in mechanical properties of the rolled products is negligible.</p>																													
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PROCESS AND PROPERTIES INDEX																																																																													
1ST AND 2ND UNITS													3RD AND 4TH UNITS																																																																
<p>ROLLING OF PLATES OF DN STEEL AT THE PETROVSKIY WORKS. M. Galemin and A. Nazarenko. (Stal, 1939, No. 10-11, pp. 46-49). (In Russian). The authors investigated the effects of preheating, of changes in the rolling schedule and of different rates of cooling on the properties of 20-mm. thick steel plates rolled at the Petrovskiy Works in the U.S.S.R. The composition of the steel used was carbon 0.17-0.21%, manganese 0.71-0.84%, silicon 0.25-0.40%, chromium 0.50-0.60%, copper 0.50-0.60%, sulphur and phosphorus each 0.04% max. The plates were rolled from slabs measuring 1600 x 1200 x 200 mm. In order to produce the optimum mechanical properties it was found that rolling should be commenced and finished at tem-</p>																																																																													
<p>peratures of 1100-1150° C. and 830-870° C., respectively, and that the plates should be cooled rapidly from the latter temperature to 400-450° C. It was also found necessary to increase the manganese content to 0.85-1.20% in order to bring the steel up to the following specification: Tensile strength 52-62 kg. per sq. mm., yield point 36 kg. per sq. mm. and 18% elongation in the direction of rolling.</p>																																																																													
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																																																																													
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AUTHOR: Beda, N.I., Borisenko, G.P., Ing., and Galemin, M.P. Dots. 133-5-12/27

TITLE: Rolling of rails using a split calibre on blooming mill rolls. (Prokatka rel'sov s primeneniye razreznogo kalibra v valkakh bluminga)

PERIODICAL: "Stal'" (Steel), 1957, pp. 431 - 435 (U.S.S.R.)

ABSTRACT: This paper is a contribution to the discussion on the rational calibration of rails. The influence of the initial height of billets and the use of a fourth trapezoidal pass and changes in the shape and dimensions of the open (lower) part of the trapezoidal passes on the quality of rails was investigated. In order to eliminate the influence of steel making and other technological factors half of the ingots from each ladle of each experimental melt was rolled on a blooming mill 1000 in 17 passes into billets 210 x 165 mm (I series) or 220 x 165 (II series) and the second half of the ingots into billets 190 x 165 mm. Then all the billets were rolled according to Fig. 1 on a mill 800. The influence of the height of billet on the quality of rails is shown in Table 1. The trapezoidal pass with displaced line of split is shown in Fig. 2 and the deformation of metal in trapezoidal passes is shown in Figs. 3 and 4. Mechanical properties of rails rolled with 3 and 4 trapezoidal passes respectively were compared: bending

Card 1/2

Rolling of rails using a split calibre on blooming mill
rolls. (Cont.)

133-5-12/27

strength of the rail foot (Fig. 5 and Table 2), types of foot fractures (Fig. 6) and impact strength of rails (Fig. 7). On the basis of the results obtained the following conclusions were drawn: 1) The deformation of metal in traperoidal passes has a substantial influence on the quality of the rails (elimination of surface cracks). The optimum number of traperoidal passes is 4. 2) The initial billets for rolling rails of the type P-43 should be of a height not less than 240-260 mm. 3) In order to decrease the width of flanges in the last traperoidal pass (when high billets are used) the design of the first traperoidal pass with a displaced line of split is recommended. There are 2 tables, 7 figures and 5 Slavic references.

ASSOCIATION: Petrovskiy Works and Dnepropetrovsk Metallurgical Institute (Zavod im. Petrovskogo i Dnepropetrovskiy Metallurgicheskiy Institut)

AVAILABLE:

Card 2/2

SOV/137-58-8-16870

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 8, p 93 (USSR)

AUTHOR: ~~Galemin, M.P.~~

TITLE: Rolling Railway Rails in a Smaller Number of Passes (Prokatka zheleznodorozhnykh rel'sov s sokrashchennym chislom prokhodov)

PERIODICAL: Tr. Nauchno-tekhn. o-va chernoy metallurgii. Ukr. resp. pravl., 1957, Vol 2, pp 223-227

ABSTRACT: The remodeling of rolling mills (increase in motor power, improvement in soaking furnaces, etc.) and the mechanization of various rolling (R) processes (transfer of metal between stands, tilting, etc.) carried out at the majority of plants in recent years makes it possible to reduce the number of passes in the R of a number of shapes. Specifically, in the R of railroad rails it is possible to reduce the passes on the blooming mill by 4 in R ingots and by 2 in rolling in section passes. This increases output by 14-20% and improves the quality of the rolled product. At the im. Dzerzhinskiy Plant, experimental R of railroad rails in a reduced number of passes on a blooming mill (11 instead of 15) was done; the number of seams and

Card 1/2

SOV/137-58-8-10870

Rolling Railway Rails in a Smaller Number of Passes

cracks in the finished product was reduced by 0.45%, while the yield of first-quality product increased to 91.4% from 89.6%.

V.D.

1. Tracks (Railroad)---Production 2. Rolling mills-
Performance

Card 2/2

GALEMIN, M.P.

PLANE I BOOK EXPLOITATION SOV/3611

Dnepropetrovsk, Metallurgicheskii Institut

Ovchabotia metallovo davieliyem (Metal Forming) Ekhar'kov, Metallurgicheskii Institut, 1960. 326 p. (Series: Iza: Nauchnoye trudy, vyp. 39) 2,100 copies printed.

Ed.: A.P. Cherkasov; Ed. of Publishing House: R.A. Belina; Tech. Ed.: S.F. Andreyev.

PURPOSE: This collection of articles is intended for technical and scientific personnel in metallurgy and in mechanical engineering. It will also be of interest to designers of rolling equipment.

COVERPAGE: This collection of articles treats the theory of rolling. It discusses such factors as the total and the unit pressures of the work on rolls, moments of rolling, forward slip, and so on. It also includes results obtained from investigation of roll quality, rolling of cast iron sheets, and other problems. No personalities are mentioned. References follow each article. Cherkasov, A.P., and M.I. Cherpukh (Candidate of Technical Sciences). Deformation of Metal in the Manufacture of Pipe. The authors present a method for determination of local (layer) deformations for any element of pipe in the focus of deformation, at various manufacturing processes (rolling, drawing, rotary rolling) in order to determine the most suitable process for given conditions. 173

Cherkasov, A.P., and M.I. Cherpukh (Candidate of Technical Sciences), and I.M. Lukenskiy (Engineer). Kinematics of the Process of Helical Rolling. The authors try to explain in a new way a number of phenomena occurring during helical rolling, the kinematics of the process magnitude and direction of forces in the contact area, slip of metal, and the ways of intensification of the process of helical rolling. 191

Galemin, M.P. (Candidate of Technical Sciences). Effect of Size and Shape of Trapezoidal Roll Pass on the Quality of Rails. The article deals with experiments undertaken by the author in order to determine the effect of the conditions of deformation at rolling on elimination of defects in rails. The practical recommendations concerning the shape passes and magnitude of drafts are presented. 221

Cherkasov, A.P., and A.P. Grunov (Candidate of Technical Sciences), and V.G. Zhuk (Engineer). Cold Rolling of Annealed Cast Iron Sheet. The authors describe process of removing defects on cast iron sheets either by hot or by cold rolling. 231

Mikolavenko, Ye.G. (Engineer), S.I. Vitenko (Candidate of Technical Sciences), and L.D. Stepanova (Engineer). Effect of Cold Deformation on the Properties of Cast Iron Sheets. The authors study the effect of cold deformation on the mechanical properties of cast iron sheets. The effect of cold deformation on the mechanical properties, number of passes, and amount of drafts on the ductility and strength of cast iron sheets is discussed. 243

Vatkin, Ya.L. (Candidate of Technical Sciences), I.D. Kronfel'd, S.V. Rozinov, and L.A. Cherkasov (Engineers). Investigation of Pressure on Rolls, and Power Consumption at Rolling Pipe in Continuous Rolling Mill With Long Mandrel. The authors discuss the distribution of pressure on rolls, the effect of wall thickness and amount of additional alloy in steel on the pressure of the rolls. They give formulas for determination of total roll pressure, and for power consumption in continuous rolling. 252

Cherkasov, A.P., and L.Ye. Kapturov. Experimental Investigation of Unit Pressures in Hot Rolling. The authors conducted a laboratory investigation in the Dnepropetrovsk Metallurgical Institute on determination of magnitude, and distribution pattern of the unit pressure in the contact area at rolling of steel and of various thickness, and with various drafts. 273

GALEMIN, M.P., kand.tekhn.nauk

Effect of the size and shape of trapezoidal grooves on the quality
of rails. Nauch. trudy IMI no.39:221-230 '60. (MIRA 13:10)
(Rolls (Iron mills)) (Railroads--Rails)

GALEMIN, M. P., kand. tekhn. nauk

Effect of the shape, weight, and conditions of the rolling of
rails on their quality. Nauch. trudy IMI no. 48:316-322 '62.
(MIRA 15:10)

(Rolling(Metalwork)—Quality control)
(Railroads—Rails)

GALEMINA, O. M.

Dissertation: "The Effect of the Pouring Temperature and Cooling Rate During Crystallization, on the Graphitization of White Iron." Cand Tech Sci, Dnepropetrovsk Metallurgical Inst, Dnepropetrovsk 1953.

W-30928

SO: Referativnyy Zhurnal, No. 5, Dec 1953, Moscow, AN USSR (~~1953~~)

AUTHOR: GALEMINA, O.M. 128-58-6-6/17
Galemina, O.M., Assistant Professor

TITLE: The Effect of the Cooling Rate on the Graphitization of White Iron (Vliyaniye skorosti okhlazhdeniya na grafitizatsiyu belogo chuguna)

PERIODICAL: Liteynoye Proizvodstvo, 1958, Nr 6, pp 17-19 (USSR)

ABSTRACT: Increasing the cooling rate of white cast iron castings raises the quantity of graphite inclusions and reduces the duration of graphitizing annealing. Some authors explain this by the growth of interphase surfaces where graphite usually appears. It was the purpose of the described experimental investigation to verify this theory. The effect of the cooling rate was studied by means of mechanical tests on standard specimen castings of cupola iron into molds of different heat-conducting capacity (dry and moist earth molds, cast iron and copper molds). The metal structures obtained are described and illustrated by photographs. The study did not verify that inter-phase surfaces determine the graphitization. It was concluded that the effect of the cooling rate on their behavior in the annealing process, on the rate of the formation of graphite, the shape, size and

Card 1/2

The Effect of the Cooling Rate on the Graphitization of White Iron 128-58-6-6/17

distribution of the graphite inclusions during the crystallization of white iron castings, depends mainly upon the formation of microscopic pores and the quantity and location of shrinkage pores which fill with graphite. There are 4 diagrams, 3 photographs, and 9 Soviet references.

AVAILABLE: Library of Congress

Card 2/2

1. Cast iron-Effects of cooling
2. Cast iron-Chemical properties
3. Cast iron-Graphitization

PODGAYEVSKIY, I.A., assistant; GALEMINA, O.N., kand. tekhn. nauk, dots.

Friction welding of carbon and alloyed steels. Izv. vys. ucheb. zav.;
mashinostr. no.11/12:186-190 '58. (MIRA 13:3)

1.Dnepropetrovskiy khimiko-tekhnologicheskii institut.
(Steel--Welding)

SOV/21-58-11-11/28

AUTHORS: Bunin, K.P., Corresponding Member of the AS UkrSSR, and Galemina, O.M.

TITLE: Effect of Casting Temperature on the Graphitization of White Cast Iron (Vliyaniye temperatury zalivki na grafityatsiyu belogo chuguna)

PERIODICAL: Dopovidi Akademii nauk Ukrain's'koi RSR, 1958, Nr 11, pp 1199-1203 (USSR)

ABSTRACT: The authors investigated the effect of casting temperature, in the range from 1,300 to 1,600°C, on the graphitization of white cast iron. It was established that the number of the forming graphite inclusions decreases and the graphitization rate slows down with the rise of casting temperature, although the total surface of interphase boundaries between the cementite and austenite in the initial white cast iron increases. The authors assume that the increase in the number of graphitization centers and its accelerated rate in the cold cast specimens was caused by the increase in the number of micropores of the shrinkage origin.

Card 1/2 There are 4 microphotos and 2 Soviet references.

SOV/21-58-11-11/28

Effect of Casting Temperature on the Graphitization of White Cast Iron

ASSOCIATION: Institut chërnoy metallurgii AN UkrSSR (Institute of Ferrous Metallurgy of the AS UkrSSR)

SUBMITTED: May 9, 1958

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

Card 2/2

18(3), 18(7)

SOV/163-59-1-32/50

AUTHOR: Galemina, O. M.

TITLE: Coalescence of Graphite in Tempered Cast Iron (Koalestsentsiya grafita v kovkom chugune)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1959, Nr 1, pp 168 - 169 (USSR)

ABSTRACT: In tempered cast iron a coalescence of the graphite inclusions occurs at high temperatures: the number of inclusions is reduced in the course of time, and the dimensions of the remaining inclusions increase. This is an investigation of tempered cast iron of the following composition: 2.32% C, 0.22% Mn, 1.09% Si, 0.049% P, 0.0041% S and 0.05% Cr. The samples were tempered at 950° and were then kept at 1050° for ten hours. It was found that under these conditions coalescence proceeds at a noticeable rate which depends upon the number of graphite inclusions present at the beginning. It was also found that in this coalescence process not only a displacement of small graphite inclusions

Card 1/2

Coalescence of Graphite in Temper Cast Iron

SOV/163-59-1-32/50

by a diffusion of carbon in the austenite takes place, but also a considerable displacement of iron atoms in the matrix. This latter process also ensures a coalescence of the structure in places where small graphite inclusions have been dissolved, and the evacuation of the matrix atoms from the surface of the growing inclusions. This displacement of the iron atoms is the limiting factor in the growth of the graphite inclusions. There are 2 figures.

ASSOCIATION: Dnepropetrovskiy khimiko-tekhnologicheskii institut (Dnepropetrovsk Institute of Chemical Technology)

SUBMITTED: March 29, 1958

Card 2/2

GALEMINA, O.M.

Effect of ultrahigh overheating on the graphitization of white
iron. Trudy DKFTI no.10:87-95 '60. (MIRA 14:1)
(Cast iron--Metallography)

GALEMINA, O.M. [Halemina, O.M.]; PLAKHOTNIK, V.N.

Effect of low temperature treatment on the graphitization of vacuum
casts of white pig iron [with summary in English]. Dop. AN URSSR
no. 3:329-331 '61. (MIRA 14:3)

1. Dnepropetrovskiy khimiko-tekhnologicheskii institut. Predstavleno
akademikom AN USSR V.N. Svechnikovym.
(Cast iron)

ZHUKOVSKAYA, Zoya Iosifovna; MINKOV, Vladimir Afroimovich; PEKELIS, Grigoriy Borisovich; FUT'KO, Ivan Ivanovich; Prinimali ucha-stiye: GALENCHIK, E.M.; KULAGA, T.N.; BEL'ZATSKAYA, L., red. izd-va; TURTSEVICH, L., tekhn. red.

[Use of natural gas in power engineering] Ispol'zovanie prirod-nogo gaza v energetike. Minsk, Izd-vo Akad. nauk BSSR, 1962.
191 p. (MIRA 16:2)

1. Otdel obshchey energetiki Energeticheskogo instituta Akademii nauk Belorusskoy SSR (for all except Bel'zatskaya, Turtsevich).

(Power engineering) (Gas distribution)

GALENCHIK, IVAN ZAHAROVICH

Dobycha I Spol'zovaniye Torfa V Sel'skom Khozyaystve; Spravochnoye Posobiye,
(By) I.Z. Galenchik (1 Dr.) Minsk, Gos. Izd-vo BSSR, 1959.
231 p. Illus., charts, maps, tables.
Bibliography: p. 229-230

GALENCHIK, I. Z.

"Investigation of the Gathering of Peat Crumbs for Use as Fertilizer by Type SKF-4 Scrapers and D-159 Bulldozers With Surface-Layer Type Gatherers." Cand Tech Sci, Department of Physics-Mathematics and Technical Sciences, Acad Sci BSSR, Minsk, 1955. (KL, No 17, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 5,
p 218 (USSR) 15-57-5-7270

AUTHOR: Galenchik, I. Z.

TITLE: Extraction of Soil Conditioning Peat With an SKF-4-Type Scraper and a D-159 Bulldozer (Lobycha torfa na udobreniye skreperom tipa SKF-4 i bul'dozerom D-159)

PERIODICAL: Tr. In-ta Torfa AN BSSR, 1956, Vol 5, pp 47-76

ABSTRACT: Special scrapers of the SKF-3 and SKF-4-type were developed by the USSR Scientific Research Institute of the Peat Industry. These scrapers are designed for extraction of peat with a moisture content of 70 to 72 percent, which is close to peat used in soil conditioning. The scrapers have been successfully used for the purpose intended. Both of these scrapers and the D-159 bulldozer are simple in design, have a high output, and a low consumption of energy. Hence

Card 1/3

15-57-5-7270

Extraction of Soil Conditioning Peat (Cont.)

the use of an SKF-4-type scraper and the D-159 bulldozer for extraction of peat for agricultural purposes was studied. The SKF-4 scraper is coupled to the front of DT-54 or STZ-NATI tractors. The article describes the design and characteristics of the scraper, as well as the method of peat extraction, which varies with the type of peat bog. The output of the scraper depends largely on use of the proper method of peat extraction and on the filling of the scoop. The described methods of peat extraction are based on a gathering trip averaging 60 m to 70 m in length. The methods were worked out on the basis of operation of the SKF-4 scraper under various production conditions. The most important technological criterion in extraction and use of peat for soil conditioning is its moisture content. The latter varies with the thickness of the layer to be removed and the duration of drying. The average thickness of the layer removed by the scraper with maximum lowering of the operating lever amounted to 32.3 mm. The thickness of the peat layer removed by the D-159 bulldozer blade is 60.3 mm. The best values for
Card 2/3

15-57-5-7270

Extraction of Soil Conditioning Peat (Cont.)

operation of the scraper are achieved with a gathering trip of 40 m to 60 m. Investigations conducted in 1952-1953 showed that the D-159 bulldozer blade could be used on the DT-54 and SKhTZ-NATI tractor for extraction of peat to be used in soil conditioning. This bulldozer can unload peat in piles up to 2.5 m because of its hydraulic hoisting mechanism. It will load peat on railway cars or trucks from a loading ramp. The conditions of the bulldozer blade operation and the technology of peat extraction are examined. The standards of production in peat extraction for soil conditioning, using the D-159 bulldozer blade on a DT-54 tractor, are stated. The cost of extraction per ton of peat, with a moisture content of 60 percent amounts to 45 to 80 kopecks under average conditions.

Card 3/3

A. A. K.

RAKOVSKIY, V.Ye.; PETROV, L.K.; GUREYKO, V.S.; GALENCHIK, I.Z.; POZNYAK,
V.S.; KUNASHKEVICH, V.M.; BELYAY, K.I., red.; KORNEVICH, N.P., red.;
VERZAL, A.I.; red.; KOROBENNIKOV, Yu.Ye., red.

[Technological arrangement for the production of mineral wool
sheets with sapropel binding material] Razrabotka tekhnologii
proizvodstva plit iz mineral'noi vaty s sapropelevoi svyazkoi.
Minsk, Izd-vo "Zvezda," 1958. 14 p. (MIRA 12:2)
(Mineral wool) (Sapropels)

GALENCHIK, Ivan Zakharovich, kand.tekhn.nauk; ZHUK, Yefim Afanas'yevich, kand.tekhn.nauk; OSTROVSKIY, Yakov Naumovich, agronom; TEREKULOV, Ivan Kharitonovich, inzh.; KAZACHENOK, V., red.; KALECHITS, G., tekhn.red.

[Winning peat and its uses in agriculture; a reference manual]
Dobycha i ispol'zovanie torfa v sel'skom khoziaistve; spravochnoe posobie. Minsk, Gos.izd-vo BSSR. Red.sel'khoz.lit-ry, 1959.
231 p. (MIRA 13:4)

(Peat)

(Fertilizers and manures)

MALYSHEV, F.A.; TISHKOVICH, A.V.; SELITRENNIKOV, A.I.; KULIKOVSKIY, A.A.;
GALENCHIK, I.Z.

Winning of peat for agricultural purposes. Trudy inst. torf. ▲H
BSSR 8:50-66 '59. (MIRA 13:12)
(Peat industry) (Fertilizers and manures)

GALENCHIK, I.Z.

Some physical and mechanical properties of sapropel. Trudy inst.
torf. AN BSSR 8:207-220 '59. (MIRA 13:12)
(Sapropel)

GALENCHIK, I.Z.

Particular aspects of the winning of sapropel by means of the TE-2
excavator. Trudy inst. torf. AN BSSR 8:252-259 '59.

(MIRA 13:12)

(Sapropel)

GALENCHIK, I.Z.; LUNDIN, K.P.

Some water-absorption and water-loss characteristics of sapropel
from the "Kolpenitsa" extensive peat deposits. Trudy Inst. torf.
AN BSSR 9:77-82 '60. (MIRA 14:2)
(White Russia--Peat) (Sapropel)

GAL. KOHLK, I.Z., kand. tekhn. nauk.

Settling of peat deposits with an underlayer of heather, Torf.
from. 40 no. 8:24-25 1963. (MIRA 1783)

LEVI, N.; GALENDINOV, I.

Electrophoretic determination of changes of the protein fractions in the blood in peptic ulcer. Suvrem. med., Sofia 9 no.3:75-81 1958.

1. Iz Voennata bolnitsa na MVR., Sofia (Nachalnik: T. Ivanov).
(PEPTIC ULCER, blood in
proteins, determ. by electrophoresis (Bul))
(BLOOD PROTEINS, in various dis.
peptic ulcer, electrophoresis (Bul))

GALENIECE, A. (Riga)

Effect of ascarid mass and extract on certain elements of the connecting tissue and blood in white rats. Vestis Latv ak no.8:121-126 '60.

(EEAI 10:9)

1. Latvijas PSR Zinatnu akademijs, Biologijas instituts.

(ASCARIS) (TISSUES) (BLOOD)

21.0001

GALENIECE, M.

Latvian vegetation map. p. 33.

BIOLOGICIESKAIA NAUKA; SELSKOMU I LESNUMU KHOZIASTVU. (Latvijas PSR zinatnu akademijs. Biologijas zinatnu nodala) Riga, Latvia, No. 3, 1957.

Monthly list of East European Accessions (EEAI), LC, Vol. 8, No. 8,
August 1959.
Uncla.

⁷⁵
GALENIEGE, M.; TABAKA, L.; ZUMBERGA, M., red.; BITARS, A., tekhn.
red.

[Guide to sphagnum mosses in the Latvian S.S.R.; a brief
survey with tables for the determination of Sphagnum sec-
tions and species] Latvijas PSR sfagnu sunu noteicejs; iss
parskats ar sfagnu sekaiju un sugu noteikšanas tabulam.
Riga, Latvijas PSRS Zinatnu akad. izdevnieciba, 1962. 109 p.
(MIRA 16:5)

(Latvia—Mosses)

BUMPUKE, M.; GALENIEKS, P., prof., doktor; JADZEME, V.; LIVENA, Dz.;
PETERSONE, A.; DIMDINS, J., red.; AIZUPIETE, M., tekhn. red.

[Flora of the Latvian S.S.R.] Latvijas PSR flora. P. Galenika
red. Riga, Latvijas Valsts izdevnieciba. Vol.3. 1957. 459 p.
[In Latvian] (MIRA 15:1)

(Latvia--Botany)

BIRKMANE, K.; BUMBURE, M.; GALENIEKS, F., prof., doktor; JAUDZEME, V.;
PETERSONE, A.; OZOLINA, E., retsenzent; LANGE, V., retsenzent;
DINDINS, J., red.; KRASOVSKA, M., tekhn. red.

[Flora of the Latvian S.S.R.] Latvijas PSR flora. P.Galienieks
red. Riga, Latvijas Valsts izdevnieciba. Vol.4. 1959. 524 p.
[In Latvian] (MIRA 15:1)

(Latvia--Botany),

Category : USSR/Optics - Physical optics

K-5

Abs Jour : Ref Zaur - Fizika, No 1, 1957, No 2355

Author : Galenin, M.D., Grishin, A.P.

Inst : Physics Institute, Academy of Sciences USSR

Title : Absolute Yield of Luminescence in the Case of Gamma Scintillations in a Naphthalene Crystal with Anthracene

Orig Pub : Zh. eksperim. i teor fiziki, 1956, 30, No 1, 33-41

Abstract : The absolute energy yield of luminescence, η , was measured for scintillations induced by gamma rays from Co^{60} and a naphthalene crystal (I) with 1% anthracene (II). The setup used to determine the value of the scintillation pulses was graduated in absolute units with the aid of a standardized lamp and a mechanical generator of short light pulses. Corrections were introduced for the spectral sensitivity of the photomultiplier. To separate electrons of definite energies, occurring upon absorption of gamma rays, a coincidence circuit was used, recording pulses accompanied by gamma quanta scattered at angles 135° -- 180° . For I and II, the value of η is $0.7 \pm 0.2\%$, one therefore obtains from the relative measurements that η is 1.7% for crystal II. The role of the "far" and "close" collisions in the excitation of luminescence is evaluated.

Card : 1/1

GALENIYEK, FR.

Russko-layshekii sel'skokhoziaistvennyi slovar [Russian-Latvian agricultural dictionary_7. Riga, Latviiskoe gos. izd-vo 1953. 424 p.

SO: Monthly List of Russian Accessions, Vol. 7 No. 2 May 1954.

GALENIYEK, Fr.

6766. Galeniyed, Fr. Pchely i shmeli v dele povysheniya urozhayev.
Riga, latgosizdat, 1954. 104 s. s. ill.; 4 l. ill. 20 sm. 7,000
ekz. 2 r. 10 k.--Bibliogr: s. 102.--Na latysh. yaz.-- (55-2196)
631.522 & 638.19 & (616.3)

SC: Knizhnaya Letopis' No. 6, 1955

5-61000-100, 1
USSR/Farm Animals - Honey Bee

Q-7

Abs Jour : Ref Zhur - Biol., No 6, 1958, No 26274

Author : Balodis K., Galoniyok F.

Inst : Not Given

Title : Apiculture. 3rd Revised Edition (Pcholovodstvo. 3-o pererabot. izd.)

Orig Pub : Riga, Valsts izd-ba, 1956, 475 lpp., il., 10 rubl., 40 kop.

Abstract : No abstract

Card : 1/1

GALENIYEK, P. [Galenieks, Pauls], prof., doktor biolog.nauk; PETERSONE, A.,
red.; DARZINA, V., tekhn. red.

[Classification of plants] Augu sistematika; augstskolu kurss.
Otrais parstradatais izdevums. Riga, Latvijas Valsts izdevnieciba,
1960. 465 p. (MIRA 14:12)
(Botany--Classification)

GALENIYEKS, O.Ya.

Results of observations on children with reversal of the tuberculin
reaction. Probl.tub. no.3:11-16 '61. (MIRA 15:5)

1. Iz 1-go protivotuberkuleznogo dispansera Riga (glavnyy vrach
N.M. Elokhina).

(TUBERCULIN)

GALENIYETS, M.

GALENIECE, M.; SABARDINA, G.

Botanists of the Baltic Republics participate in the 6th
Botanical Excursion along the Daugava Valley. Vestis Latv
ak no.2:139-141 '62.

Galenkina, K. V. --"Certain Questions of the Age Changes in the Anatomy of the Parathyroid Glands." Omsk State Medical Inst ineni M. I. Kalinin, Omsk, 1955 (Dissertation for Degree of Doctor of Medical Sciences.)

SO: Knizhnaya Letopis', No. 23, Moscow, Jun 55, pp 87-104

RABINOVICH, Z.L.; PODKOLZINA, K.M.; SHLYAKHOVA, N.I.; MIKHNOVSKIY, S.D.
[Mikhnovs'kyi, S.D.]; GALENKO, D.N. [Halenko, D.M.]

Arithmetic calculator with increased computing speed. Zbir.
prats' z obchys. mat. i tekhn. 3:76-83 '61. (MIRA 15:2)
(Calculating machines)

ACCESSION NR: AT3012133

S/2967/63/000/000/0165/0170

AUTHORS: Rabinovich, E. D.; Mikhnovskiy, S. D.; Podkolzina, K. M.; Shlyakhovaya, N. I.; Galenko, D. N.

TITLE: Arithmetic device with increased speed in execution of operations

SOURCE: Voprosy* vy*chislitel'noy matematiki i vy*chislitel'noy tekhniki. Moscow, 1963, 165-170

TOPIC TAGS: arithmetic device, binary system, partial addition, combination semi-integrator, transposition, square root operation

ABSTRACT: The logical structure and various junction schemes of a parallel arithmetic device of some general type are considered. The basic operations of the device are addition, subtraction, multiplication, division, and taking the square root, all done in a binary system with fixed decimal point location. The general electronic structure of the device is given with trigger elements, amplifiers, and semiconductor triodes. To improve the economy of operation, a two work-cycle system is used, carrying out partial addition by means of a combination semi-integrator. Multiplication is performed starting with the lowest digit with partial product shifts. To accelerate division operations, a transposition code is used,

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ACCESSION NR: AT3012133

transcribing the zero digit numbers in cells of the same register by the scheme

$n - (j - 1) \approx j$, where j - number of arbitrary zero digit. The time for performing a square root operation is given by $\tau_r = (3n + 2) \tau_c + n \tau_z$, where n indicates quantity of zero digits in the mantissa of a number and τ is the work cycle. Orig. art. has: 10 formulas and 3 figures.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 220ct63

ENCL: 00

SUB CODE: CP

NO REF SOV: 003

OTHER: 001

Card 2/2

GALENKO, I., Geroy Sotsialisticheskogo Truda, zasluzhennyy stroitel' UkrSSR

The zero cycle. Inform.biul.VDNKH no.1:4-6 Ja '65.

(MIRA 18:3)

GALENKO, M.D. [Halenko, M.D.], starshiy nauchnyy sotrudnik; MANOYLO, M.A.,
starshiy nauchnyy sotrudnik

Use more efficiently hay mowers in pea harvesting. Mekh. sil'.
hosp. 14 no.6:6-8 Je '63. (MIRA 17:3)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i
elektrifikatsii sel'skogo khozyaystva.

GALENKO, M.; SHIDLOVSKIY, Yu.

Performance of grain-harvesting machinery at increased speeds.
Tekh. v sel'khoz. 20 no.6:39-43 Je '60. (MIRA 13:10)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i
elektrifikatsii sel'skogo khozyaystva.
(Grain--Harvesting)

KLEMIN-SHARONOV, V.A., kand.tekhn.nauk; GALENKO, M.A., inzh.

Calculating the mechanical characteristics of an electric motor with mixed excitation operating on a circuit with restriction of the developing moment. Izv.vys.ucheb.zav.; energ. 3 no.6:53-56 Je '60. (MIRA 13:6)

1. Khar'kovskiy politekhnicheskii institut imeni V.I.Lenina.
Predstavlena kafedroy elektrifikatsii promyshlennykh predpriyatiy.
(Electric motors, Direct current)

NIKITENKO, I.T.; GALENKO, M.D.

[Controlling losses in harvesting] Bor'ba s poteriami na uborka.
Moskva, Gos. izd-vo sel'khoz. lit-ry, 1956. 59 p. (MLRA 10:2)
(Harvesting)

~~GALENKO, M.D.~~

Using machinery in harvesting lupine for seed. Zemledelie 6 no.8:
71-74 Ag '58.

(MIRA 12:11)

(Lupine--Harvesting)

GALENKO, M.D. [Halenko, M.D.], nauchnyy rabotnik; V. SUSHKIN, A.I., inzh.

Converting pull-type S-6 combines into self-propelled types.
Mekh.sil'.kosp. 9 no.12:5-7 D '58. (MIRA 12:1)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva (for Galenko). 2. Ministerstvo sel'skogo khozyaystva USSR (for Masushkin).
(Combines (Agricultural machinery))

GALENKO, M.D., [Halenko, M.D.] starshiy nauchnyy sotrudnik; TIMOSHENKO, G.G.
[Tymoshenko, H.H.], starshiy nauchnyy sotrudnik.

Mechanized harvesting of buckwheat. Mekh. sil'.hosp. 11 no.8:14-17
Ag '60. (MIRA 13:9)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i
elektifikatsii sel'skogo khozyaystva.
(Buckwheat--Harvesting)

GALENKO, M.D. [Galenko, M.D.], starshiy nauchnyy sotrudnik; MANOYLO, M.A.,
starshiy nauchnyy sotrudnik; TIMOSHENKO, G.G. [Tymoshenko, H.H.],
starshiy nauchnyy sotrudnik

Using machinery in the cultivation of peas. Mekh. sil'. hosp. 12
no. 3:22-24 Mr '61. (MIRA 14:4)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii i
elektrifikatsii sel'skogo khozyaystva.
(Peas) (Agricultural machinery)

GALENKO, M.D., inzh.

Technology of mechanized harvesting of peas. Mekh. i elek.
sots. sel'khoz. 21 no.1:11-14 '63. (MIRA 16:7)

1. Ukrainskiy nauchno-issledovatel'skiy institut mekhanizatsii
i elektrifikatsii sel'skogo khozyaystva.
(Peas—Harvesting)

GALENKO, N.P.

The catalytic oxidation of ammonia. M. V. Polyakov, V. J. Urizko, and N. P. Galenko (L. V. Pisnarskiy Inst. Phys. Chem., Acad. Sci. U.S.S.R., Kiev). *Zhur. Fiz. Khim.* 28, 1460-6 (1954); cf. *C.A.* 48, 7312a. — The yield of NO with respect to temp. and flow rate was studied on Fe mesh, diam. = 0.8, 1.4, and 1.8 cm., in the temp. range 815-1040° and at vol. rates of 18-300 l./hr. The occurrence of optima in temp. and contact time is due to the conversion of NH_3 into N_2 which takes place intensively at high temps. and long contact times. The activation and poisoning of the catalyst are studied. The role of the walls of the reaction vessel in the oxidation of NH_3 is discussed. J. R. L.

GALENKO, N. P.

RT-912 (The reality of optimum conditions during catalytic oxidation of ammonia)
K voprosu o real'nosti optimal'nykh uslovii pri kataliticheskom okislenii ammiaka.
Doklady Akademii Nauk SSSR, 77(5): 835-837, 1951

GALENKO, N.P.; KLIMENKO, A.P.

Selecting and studying bentonites for methane storage by the
sorption method. Bent. gliny Ukr. no.1:74-85 '55.
(MIRA 12:12)

1. Institut ispol'zovaniya gaza AN USSR.
(Bentonite) (Methane--Storage)

Galenko, V.P.

Investigation of adsorption of natural gas by bituminous clays. N. P. Galenko. *Trudy Inst. Izobrazheniya Gaza. Akad. Nauk Ukr. S.S.R.* 1956, No. 4, 66-72. Adsorption was studied in the temperature region from minus 140° to minus 161°C. at atmospheric pressure on activated clays from various regions of the Soviet Union. Most favorable method of activation was found to be heating for 2 to 2.5 hours at 400 to 450°C. The adsorbent was treated with natural gas in liquefied form. Best results of gas storage were obtained with absorbing materials which have a large number of intermediate size pores. Silica gel is 2 to 2.5 times more effective than natural clays. B. Dekhui

1-4E2C

gmb

GALENKO, N. P.

73-1-21/26

AUTHOR: Vdovichenko, V. T., Galenko, N. P. and Sarashvili, I. G.

TITLE: Investigations of Methane Oxidation in Molten Metal Chloride Salts. (Issledovaniye Khlorirovaniya Metana v Rasplavakh Sol'ey Khloridov Metallov.)

PERIODICAL: Ukrainskiy Khimicheskiy Zhurnal, 1957, Vol. 23, No.1, pp. 110 - 116 (USSR).

ABSTRACT: Optimal conditions for this process were found to be: temperatures of 450° C, gas velocity of 30 l/hour and an oxygen: chlorine ratio of 0.68 - 0.85. The quantity of active chlorine at optimum process conditions is 60 - 64 vol.%. Under conditions of direct chlorination of methane in a solution of KCl - ZnCl₂ - CuCl₂ about 85 - 90 mol.% consists of methyl chloride, 9 - 14% methylene chloride, 2 - 5% chloroform and a negligible amount of tetravalent C. Previously published work on the chlorination process of methane is reviewed briefly (viz. Refs. 1 - 4). Details of the laboratory equipment used for this experiment and an illustration of the same are given. Highest yields were obtained at a temperature of 60° C (graph 2), the highest yield (according to the gas velocity) at 30 l/hour. Experimental data on the chlorination of methane in melts are tabulated. There

Card 1/2

Investigations of Methane Oxidation in Molten Metal Chloride Salts.
73-1-21/26
are 4 graphs, 1 table, 6 references, 3 of which are
Slavic.

SUBMITTED: August, 22, 1956.

ASSOCIATION: Gas Utilization Institute, Academy of Sciences,
Ukrainian S.S.R. (Institut Ispol'zovaniya Gaza AN USSR.)

AVAILABLE: Library of Congress

Card 2/2

SOV/80-32-2-19/56

AUTHORS: Vdovichenko, V.T., Galenko, N.P., Larionov, A.V.

TITLE: Conversion of Methane by Sulfuric Anhydride to Carbon Bisulfide (Konversiya metana sernistym angidridom do serougleroda)

PERIODICAL: Zhurnal prikladnoy khimii, 1959, Vol XXXII, Nr 2, pp 347-350 (USSR)

ABSTRACT: The interaction of methane with sulfuric anhydride for the production of carbon bisulfide has been studied in the apparatus presented in Figure 1. As catalysts were tried: aluminum gel and bentonite clay, pumice, silica gel "KSK" soaked in various salts. The most active catalyst is pumice treated with lead acetate. The most favorable temperature is 900°C for pumice and 800°C for bentonite. The change of the ration $CH_4 : SO_2$ from 0.5 to 3 increases the yield of CS_2 from 0.3 to 1 g per

Card 1/2

SOV/80-32-2-19-56

Conversion of Methane by Sulfuric Anhydride to Carbon Disulfide

1 liter SO₂.

There are 3 tables, 1 graph, 1 diagram, and 10 references,
5 of which are Soviet, 4 English, and 1 German.

SUBMITTED: August 15, 1957

Card 2/2

VDOVICHENKO, V.T., GALENKO, N.P.

Producing chlorine derivatives of methane by the oxidative
chlorination of natural gas. Gas.prom. 5 no.4:37-41 Ap '60.
(MIRA 13:8)

(Gas, Natural) (Chlorination) (Methane)

GALENKO, N.P.; PROSHKIN, A.A.; CHEMERIS, T.A.; KOVALENKO, N.A.;
GOLUBCHENKO, I.T.

Production of carbon disulfide. Gaz. prom. 5 no. 12:46-49 D '60.
(MIRA 14:1)

(Carbon disulfide) (Gas, Natural)

PROSHKIN, A.A.; VDOVICHENKO, V.T.; GALENKO, N.P.; GLUKHOMANYUK, A.M.;
KOVKA, B.M.

Production of carbon tetrachloride. Gaz.prom. 6 no.8:31-34 '61.
(MIRA 14:10)

(Carbon tetrachloride)

GALENKO, N.P.; LEVANYUK, T.A.; KOVALENKO, N.A.

Obtaining carbon disulfide. Gaz. prom. 9 no.3:38-41 '64.
(MIRA 17:9)

L 31919-66 EWT(m)/EWP(j)/T IJP(c) WW/RM

ACC NRI: AP6007963

(A)

SOURCE CODE: UR/0191/66/000/003/0015/0017

AUTHOR: Galenko, N. V.; Dremin, V. D.; Andreyev, A. P. M4

ORG: none B

TITLE: Investigation of thermal degradation of polystyrene with high-impact strength 15

SOURCE: Plasticheskiye massy, no. 3, 1966, 15-17

TOPIC TAGS: polystyrene, impact stress, thermal decomposition, oxidation, spectroscopy

ABSTRACT: Thermal decomposition of a polystyrene with high impact strength was studied in air, in vacuo, and at a temperature and a duration of the process analogous to the conditions of an industrial reprocessing. Two makes of high-impact-strength polystyrene were investigated: the bulk polystyrene US-1 and the emulsion-polymerized polystyrene ES-SU₃. A film deposited on glass was prepared from a 5% C₆H₆ solution of a polystyrene, dried in vacuo at room temperature for a few days, and then subjected to thermal processing at 200, 225, and 250C. The films were subsequently investigated by infrared spectroscopy. The spectrum of US-1 was basically identical to that of the styrene homopolymer with the exception of weak 995 and 967 cm⁻¹ bands, corresponding to the asymmetric vibrations of the vinyl group. In addition to this deviation, PS-SU₃ also had additional 1725 and 1140 cm⁻¹ bands,

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UDC: 678.746.22-136.22-134.622.01:536.495

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ACC NR: AP6007963

corresponding to the CO group of fatty acids, which were used as emulsifying agents, and to the $\text{CH}_2\text{-O-CH}_2$ group, respectively; the intensity of 1725 and 967 cm^{-1} bands decreased due to thermal processing. Simultaneously, a new band appeared at 1700 cm^{-1} , corresponding to CO groups in the polymer chains. This phenomenon indicated that in the course of thermal degradation the oxidation of the C-C bonds occurred. Analogous oxidation was proved spectrometrically to occur in gels of these polystyrenes. (The gel was separated by a centrifuging of 2% polystyrenes in C_6H_6 solutions at 120C in atm.) Thermal processing affected gels analogously to the corresponding films. The rheological investigation proved that due to the thermal degradation the molecular weight decreased from 334,600 to 307,200 and from 240,600 to 219,600 for PS-SU₃ and UP-1 polystyrenes, respectively. Orig. art. has: 4 fig.

SUB CODE: 11,07/ SUBM DATE: none/ ORIG REF: 003/ OTH REF: 004

MT
Card 2/2

GALENKO, I. P.

"An Investigation of the Cyclic Deformation of Metals." Cand Phys-Math
Sci, Moscow Order of Lenin State U imeni M. V. Lomonosov, 29 Dec 54. (VM, 20 Dec 54)

Survey of Scientific and Technical Dissertations Defended at USSR Higher
Educational Institutions (12)
SO: Sum. No. 556, 24 Jun 55

Galenko, P. P.

444. Akulov, N. S., and Galenko, P. P., Theory of the plastic deformation of metals (in Russian), Doklady Akad. Nauk SSSR

(N.S.) 103, 3, 387-390, 1955 (translated from Russian by M. D. Friedman, 572 California St., Newtonville, Mass., 6 pp.).

Authors develop formulas for small static stress cycles. The formulas are analogous to Rayleigh's laws for small magnetic cycles and are interpreted with a model analogous to Preisach's magnetic model [Becker and Döring, "Ferromagnetism," Springer, Berlin, 1939, p. 218; L. Prandtl, ZAMM 8, p. 85, 1928, stated qualitative relations for more general stress relaxation by analogy with magnetic relations of E. Masing]. The formulas represent the ascending and descending branches of a small cyclic versus torque cycle as parabolas; the model is an aggregate of blocks, each having a rectangular hysteresis loop of width $2M_0$, centered about torque M_0 , and the aggregate has a statistical distribution of values, uniform for small M_0 and M_1 . Experiments on nickel and iron confirm the predicted dependence of hysteresis loss on amplitude; the magnetostrictive contribution present in ferromagnetic materials is stated to have been eliminated by use of a polarizing field or torque. (Rayleigh and Preisach are mentioned, but there are no references, at least none in the translation.)

William Fuller Brown, Jr., USA

SOV/137-59-3-6134

Translation from: Referativnyy zhurnal. Metallurgiya, 1959, Nr 3, p 170 (USSR)

AUTHOR: Galenko, P. P.

TITLE: An Investigation of Magnetic Permeability Changes in Ni and Armco Iron Subjected to Torsional Deformations (Issledovaniye izmeneniya magnitnoy pronitsayemosti nikelya i armko-zheleza pri deformatsii krucheniya)

PERIODICAL: Sb. nauchn. tr. Belorussk. lesotekhn. in-t, 1957, Nr 10, pp 416-422

ABSTRACT: Variations in the magnetic permeability μ of Ni and Armco iron were investigated on specimens subjected to non-reversing torsional deformation (TD). It was established that the nature of the variation of μ under conditions of TD is independent of the sign of the longitudinal magnetostriction in the ferromagnetic material. The μ characteristics of Ni and Armco iron vary in a different fashion in weak and medium magnetic fields. The effect of the components of elastic and plastic TD on variations in μ is demonstrated.

A. R.

Card 1/1

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S/170/61/004/003/008/013
B117/B209

AUTHORS: Akulov, N. S., Galenko, P. P.

TITLE: Theory of crystal rigidity in vibrations

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 4, no. 3, 1961, 98-104

TEXT: On the basis of the kinetic displacement theory established in earlier papers (Refs. 1, 2: Akulov, N. S., DAN BSSR, 3, No. 7, 1959 and Akulov, N.S. i Franyuk, V. A., DAN BSSR, 3, No. 8, 1959), the authors calculated the deviations from Hooke's law in the case of alternating and constant tensions. The deformation of a hollow cylinder during torsion was examined. Alternating tensions give rise to alternating deformations of variable amount (Fig. 1). Equations for the curve of initial deformation as well as for the rising and the falling branch of the hysteresis loop were phenomenologically found earlier (Ref. 3: Akulov, N. S. i Galenko, P. P., DAN SSSR, 103, No. 3, 1955). In the present paper, these formulas are derived on the basis of the displacement theory: (1)

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S/170/61/004/003/008/013
B117/B209

Theory of crystal ...

$$\left. \begin{aligned} \gamma &= k\tau \pm b\tau^2 + \dots \\ \gamma^+ &= (k + b\tau_a)\tau + (b/2)(\tau^2 - \tau_a^2) + \dots \\ \gamma^- &= (k + b\tau_a)\tau - (b/2)(\tau^2 - \tau_a^2). \end{aligned} \right\}$$

(σ and ϵ are general notations of directions and deformations; in the special case of a displacement $\sigma \equiv \tau$, $\epsilon \equiv \gamma$). The linear term in these equations describes the elastic deformation and the quadratic term the irreversible deformation, i. e., it characterizes the deviations from Hooke's law. The irreversible deformation may be calculated if the distribution function $f(\tau_c, \tau_i)$ is known:

$$(8) \quad \gamma_{\text{irrev.}} = 2\bar{\gamma}_c \int_0^{\tau_a} \int_0^{\tau_c - \tau_a} f(\tau_c, \tau_i) d\tau_c d\tau_i.$$

Plastic deformation leads to a residual deformation, the amount of which is given by the expression (11), $\gamma_{\text{res}} = (b/2)\tau_a^2$, as follows from equation (1), i. e., it amounts to half the total irreversible deformation. During one complete cycle of external tension variation, $\tau_a \leq \tau \leq \tau_a$, an hysteresis loop with an

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Theory of crystal ...

area equal to the energy losses on heating of metals arises. These losses in the course of a quasi-cycle may be calculated statistically. Every displacement has, during the entire alternating deformation cycle, its own losses which are determined by the elementary rectangular loop (Fig. 1b). In order to calculate the sum of the losses, one has to determine the number of displacements occurring irreversibly during one quasi-cycle. Summing up: It has been shown that the relations (1) may be explained by the statistical displacement theory as established by the authors, which accounts for the possibility of expanding the distribution function in a series. The relations derived correspond to the law of doubling which was formulated for the first time with respect to plastic deformation (Ref. 1). The fundamental theses of the statistical chain displacement theory are in accordance with the known results of the phenomenological theory (Ref. 3). Formulas (9) and (11) show that the residual deformation amounts to half the maximum value of deformation. Fig. 4b shows hysteresis loops for copper samples. With the aid of equation (1) and the curve of initial deformation, one may construct the rear sides of the rising and falling portion of the hysteresis loop on the co-ordinate axes by proper doubling of the scales. Fig. 4a shows a com-

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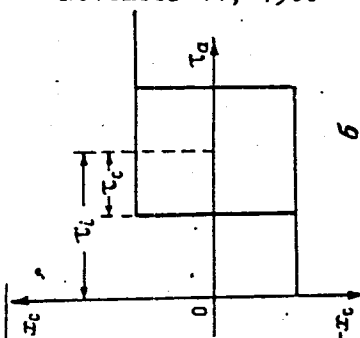
Theory of crystal ...

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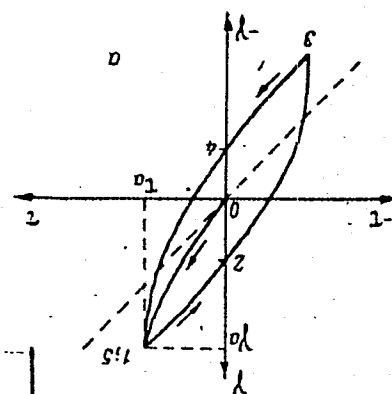
parison between theoretical an experimental curve. Experimental and theoretical points coincide fairly well. Ye. I. Kondorskiy is mentioned. There are 4 figures and 5 references: 4 Soviet-bloc.

ASSOCIATION: Fiziko-tehnicheskii institut AN BSSR, g. Minsk (Institute of Physics and Technology, AS BSSR, Minsk)

SUBMITTED: November 11, 1960



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Theory of crystal ...

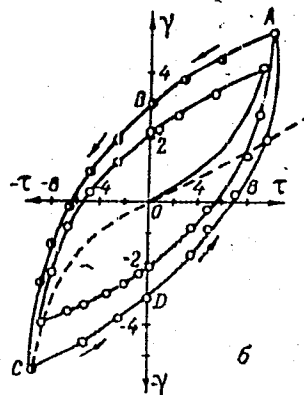
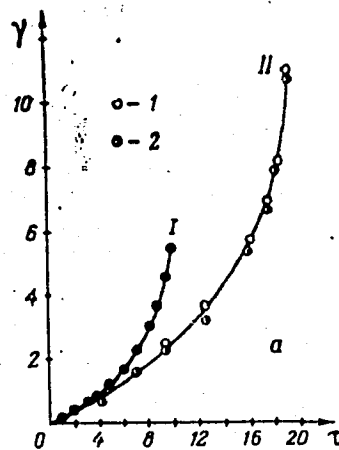


Рис. 4:

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S/137/62/C00/006/117/163
A052/A101

AUTHORS: Galenko, P. P., Svirshchevskaya, M. M.

TITLE: The effect of hardening temperature on magnetic properties of
ШХ-6 (ShKh-6) steel

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 6, 1962, 51, abstract 6I305
("Nauchn. inform. Belorussk. tekhnol. in-t. Ser. obshchetekhn."
Minsk, 1961, 18 - 26)

TEXT: The effect of the hardening temperature on magnetic properties of
ShKh-6 steel in constant and variable magnetization fields was investigated.
The quality of hardening of parts made of this steel can be controlled by com-
paring magnetic induction of samples hardened at optimum temperature with that
of controlled samples. To detect parts heated for hardening to a temperature
under 830°C (underheating) magnetization fields of 30 - 50 oe should be applied.
To detect parts heated for hardening to temperatures over 830°C (overheating)
magnetization fields of over 100 oe should be applied. In magnetic devices in-
tended for the detection both of underheating and overheating it is advisable
to apply magnetization fields of ~ 125 oe and over.
[Abstracter's note: Complete translation] T. Rummyantseva
Card 1/1

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S/250/62/006/009/001/004

1046/1246

AUTHORS: Akulov, N. S. and Galenko, P. P.

TITLE: The theory of the rectangular ferromagnetic hysteresis loop

PERIODICAL: Akademiya nauk BSSR. Doklady, v. 6, no. 9, 1962, 551-555

TEXT: The energy Q dissipated along one hysteresis loop and the irreversible magnetization I_{irr} of the ferromagnetic are determined for the distribution function

$$\phi(H_c; H_i) = \phi_0 + c_1 H_i + c_2 H_c + c_3 H_i H_c + c_4 H_i^2 + c_5 H_c^2 + \quad (11)$$

of the ferromagnetic domains with respect to their internal fields H_i and the coercive forces H_c (here ϕ_0 represents uniform distribution in the $(H_c; H_i)$ phase plane). The results

$$Q = \frac{4}{3} \phi_0 I_s H_a^3 + \frac{2}{3} c_2 I_s H_a^4 + \left(\frac{2}{15} c_4 I_s + \frac{2}{5} c_5 I_s \right) H_a^5 \quad (13)$$

$$I_{irr} = \phi_0 I_s H_a^2 + \frac{1}{3} (c_1 + c_2) I_s H_a^3 + \frac{1}{6} \left(\frac{c_3}{2} + c_4 + c_5 \right) I_s + H_a^4, \quad (15)$$

where H_a — the external magnetic field, and I_s — spontaneous magnetization, define the empirical parameters in the phenomenological equations

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The theory of the rectangular ferromagnetic hysteresis loop

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$$Q = \frac{4}{3} b H_a^3 + 2 a_3 H_a^4$$

$$I_{rr} = b H_a^2 + a_3 H_a^3.$$

(1)

There are 2 figures.

ASSOCIATION: Fiziko-tekhnicheskii institut AN BSSR (Physico-technical Institute, AS BSSR)

SUBMITTED: May 29, 1962

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